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EXAMINER	
BATTAGLIA, MICHAEL V	

ART UNIT	PAPER NUMBER
2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/553,616	YOSHIKAWA ET AL.	
	Examiner	Art Unit	
	Michael V. Battaglia	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *2,5-7,9 and 11-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 4* is/are rejected.

7)☒ Claim(s) *8,10 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 October 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election of Species C (Figs. 7-9) in the reply filed on March 4, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

In the Election Requirement mailed February 11, 2008, claims 1, 3, 4, 8, 10 and 18 were identified as corresponding to the elected species. In Applicant's reply filed on March 4, 2008, Applicant alleges that claims 1, 3-7, 13-14 and 17-18 read on the elected species.[1] However, claims 5-7, 13, 14 and 17 do not read on the elected species. On the other hand, claims 8 and 10 do.

Claims 5-7 do not read on the elected species because claims 5-7 require an "**amplitude detecting means** that detects the amplitude of the focus error signal" (emphasis added) and "**information surface detecting means** that detects the target surface from the plurality of information surfaces of the information carrier, **using the output signal from the amplitude detecting means**" (emphasis added) not found the elected species (see Fig. 1, elements 62 and 61 respectively and compare Fig. 7).

Claims 13 and 14 do not read on the elected species because claims 13 and 14 require a "**movement amount setting means** that sets the amount of movement of the objective lens **based on the output signal from the surface discriminating means**" (emphasis added) and a "**movement amount managing detecting means B** that manages and detects that the focal point

[1] Applicant provided no explanation for the disagreement between the claims identified by Examiner as corresponding to the elected species and the claims identified by Applicant as reading on the elected species (i.e., no explanation why Applicant feels claims 5-7, 13, 14 and 17 read on the elected species and claims 8 and 10 do not).

moves **for a predetermined amount B set by the movement amount setting means** after the focal point passage detecting means detects passage of the focal point" (emphasis added) not found the elected species (see Fig. 10, elements 72 and 60 respectively and compare Fig. 7).

In regard to claim 17, by omitting claim 9 from the list of claims which Applicant alleges to read on the elected species, Applicant implicitly acknowledges that claim 9 does not read on the elected species. Although Applicant does not allege that claim 9 reads on elected species, Applicant alleges that claim 17, which depends on claim 9 and therefore includes all the limitations of claim 9, reads on the elected species. Claim 17 does not read on the elected species for the same reasons that Applicant to determine that claim 9 does not read on the elected species.[2]

Claims 8 and 10 read on the elected species because the elected species discloses an optical disk control device including all the limitations of claim 1 (note that Applicant and Examiner agree that claim 1 read on the elected species) further comprising a movement amount managing detecting means A (Fig. 7, element 70) that manages and detects that the focal point moves a predetermined amount after the focal point passage detecting means detects passage of the focal point, wherein the reversal instruction means (Fig. 7, element 40) outputs a reversal instruction based upon the output signal from the movement amount managing detecting means A (note input to element 40 from element 70), and further comprising an information surface

[2] Note that claim 17 does not read on the elected species because claim 9 requires a "**rotation number managing detecting means** . . . , wherein the reversal instruction means outputs a reversal instruction using the output signal from the rotations number managing and detecting means, in addition to the output signal from the **movement amount managing detecting means A**" (emphasis added) not found in the elected species (see Fig. 10 where the rotation number managing detecting means corresponds to element 72, the reversal instruction means corresponds to element 40A and the movement amount managing detecting means A corresponds to element 70, and compare Fig. 7).

discriminating means (Fig. 7, element 84) that discriminates whether or not the surface that the focal point passage detecting means has detected is the target surface for which focus pulling-in is to be performed, wherein the reversal instruction means outputs a reversal instruction using the output signal from the information surface discriminating means in addition to the output signal from the movement amount managing detecting means A (note input to element 40 from element 84).

Therefore, claims 2, 5-7, 9 and 11-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. Figures 14-16 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeya et al. (hereinafter Takeya) (US 6,240,054).

In regard to claim 1, Takeya discloses an optical disk control device (Fig. 1) comprising: a converging projecting means (Fig. 1, element 22 and Fig. 2) that converges and projects a light beam ("light beam" of Col. 11, line 34) via an objective lens (Fig. 1A, element 11) to an information carrier (Fig. 1, element 20) having a plurality of information surfaces (Fig. 2); a focus-moving means ("focus coil" of Col. 11, line 50) that, by moving the objective lens, moves the focal point of the light beam converged by the converging projecting means in a direction normal to the surface of the information carrier (Figs. 1A, 1B and 2B and Fig. 5, steps S4, S6 and S12); a focus error detecting means (Fig. 1, element 23) that generates a focus error signal (Figs. 1A, 1B and 2B, element SFE) in response to the positional displacement of the focal point of the light beam with respect to the surfaces of the information carrier (Col. 11, lines 38-41); a focal point passage detecting means (Fig. 1, portion of elements 38-47 that carries out performs steps S7-S10 of Fig. 5) that detects that the focal point of the light beam has passed the surface and the

information surfaces of the information carrier (Fig. 5, steps S7-S10 and note that the focal point is detected as having passed the surfaces when the time counted by the timer reaches T1 (Figs. 3A and 3B; Col. 14, lines 32-39; and Col. 15, lines 19-36)); a reversal instruction means (Fig. 1, portion of elements 38-47 that performs step S12 of Fig. 5) that outputs a reversal instruction (Fig. 5, step S12) using the output signal from the focal point passage detecting means (Col. 15, lines 37-39); a driving signal generating means (Fig. 1, element 30 while the "focus loop [is] in an open path state" (Col. 11, lines 55-57)), that, along with outputting a signal to the focus moving means to move the objective lens toward the information carrier, switches the signal so as to move the objective lens away from the information carrier in response to the reversal instruction, and outputs that signal (see "Focus Drive Signal" of Figs. 1B, 3A and 4A and note its relation to T1 and that focus coil drive circuit 30 outputs the focus drive signal to the focus coil to "appl[y] an UP or DOWN operation to the objective lens" and cause the objective "lens [to be] moved up and down" while the "focus loop [is] in an open path state" (Col. 11, lines 47-57 and Col. 14, lines 7-12 and 24-26)); a controlling means (Fig. 1, element 30 while the "focus loop [is] in . . . a close path state" (Col. 11, lines 55-57)) that, using the focus error signal, controls the focus moving means such that the focal point follows each of the information surfaces of the information carrier (Col. 11, lines 38-51; Col. 16, lines 22-28; and Col. 18, lines 28-36); and a focus pulling-in means (Fig. 1, element 29) that switches an object of the operation from the driving signal generating means to the controlling means (Fig. 5, step S23 and Fig. 6, element S54), and lets the focus moving means perform a focus pulling-in action (Col. 11, lines 51-57 and Figs. 3A, 4A, 5 and 6).

In regard to claim 4, Takeya discloses that the driving signal generating means outputs a signal ("Focus Drive Signal" of Figs. 1B, 3A and 4A) having a slope of the driving waveform that changes when switching the signal in response to the reversal instruction (Figs. 3A and 4B).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (US 5,901,22) in view of Izumi et al (hereinafter Izumi) (US 5,859,824).

In regard to claim 1, Inoue discloses an optical disk control device (Fig. 4) comprising: a converging projecting means (Fig. 4, element 3) that converges and projects a light beam via an objective lens (Fig. 4, element 3a) to an information carrier (Fig. 4, element 1); a focus-moving means (Fig. 4, element 4) that, by moving the objective lens, moves the focal point of the light beam converged by the converging projecting means in a direction normal to the surface of the information carrier; a focus error detecting means (Fig. 4, element 7) that generates a focus error signal (Fig. 4, element FE) in response to the positional displacement of the focal point of the light beam with respect to the surfaces of the information carrier (Fig. 3); a focal point passage detecting means (portion of Fig. 4, element 11 that performs steps S109-S113 of Fig. 6B) that detects that the focal point of the light beam has passed the surface and the information surface of the information carrier (Fig. 6B, steps S109-S113 and see Figs. 8B, 9 and 10 and note that the surfaces have been passed after 10 msec); a reversal instruction means (portion of Fig. 4, element

11 that performs steps S116 of Fig. 7A) that outputs a reversal instruction using the output signal from the focal point passage detecting means (Fig. 7A, step S116 and see Figs. 8B, 9 and 10); a driving signal generating means (portion of Fig. 4 that generates the "Focus Drive Voltage" of Figs. 8-12), that, along with outputting a signal to the focus moving means to move the objective lens toward the information carrier, switches the signal so as to move the objective lens away from the information carrier in response to the reversal instruction, and outputs that signal (Figs. 8B, 9 and 10); a controlling means (portion of Fig. 4, element 9 that generates a focus drive signal on the basis of the focus error signal FE (Col. 5, lines 19-32)) that, using the focus error signal, controls the focus moving means such that the focal point follows the information surface of the information carrier (Col. 5, lines 19-32); and a focus pulling-in means (portion of Fig. 4, element 9 that switches an object of the operation from performing "the focus search operation to locate the objective lens 3a to the focus pull-in range" and "executing the focus servo operation based on the focus error signal FE" by "closing the focus servo loop" (Col. 5, lines 33-42)) that switches an object of the operation from the driving signal generating means to the controlling means, and lets the focus moving means perform a focus pulling-in action (Col. 5, lines 33-42 and Figs. 8-12 and note that the focus servo loop has been closed at the "FOCUS ON" point).

Inoue does not disclose that the information carrier has a plurality of information surfaces. As a result, Inoue does not disclose that focal point passage detecting means detects that information surfaces have been passed and that the focus moving means is controlled such that the focal point follows each of the information surfaces.

Izumi discloses an optical disk control device comprising: a converging projecting means (Fig. 2, element 12) that converges and projects a light beam via an objective lens (Fig. 2,

element 12a) to an information carrier (Fig. 2, element 11 and "dual layer disk" of Col. 3, line 55-56) having a plurality of information surfaces (Fig. 4B, elements RL1 and RL2); a focus-moving means (Fig. 2, elements 12b and 19) that, by moving the objective lens, moves the focal point of the light beam converged by the converging projecting means in a direction normal to the surface of the information carrier (Col. 3, lines 57-61); a focus error detecting means (Fig. 2, element 14) that generates a focus error signal (Figs. 1B and 2, "Focus Error Signal FE") in response to the positional displacement of the focal point of the light beam with respect to the surfaces of the information carrier; a driving signal generating means (Fig. 2, element 17), that, along with outputting a signal (Figs. 1B and 2, element FS) to the focus moving means to move the objective lens toward the information carrier, switches the signal so as to move the objective lens away from the information carrier in response to the passing of a half period A (Fig. 1B, element A and note that the passing of half period A occurs after the focal point of the light beam has passed the surface and the information surfaces of the information carrier), and outputs that signal; a controlling means (Fig. 2, elements 15 and 16) that, using the focus error signal, controls the focus moving means such that the focal point follows each of the information surfaces of the information carrier; and a focus pulling-in means (Fig. 2, element 18) that switches an object of the operation from the driving signal generating means to the controlling means, and lets the focus moving means perform a focus pulling-in action. It is noted that Izumi also teaches that, in a focus search performed on an information carrier having a plurality of information surfaces, the focal point of the objective lens is moved passed the information surfaces.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the information carrier of Inoue to have a plurality of information surfaces, for the focal point passage detecting means of Inoue to detect that information surfaces have been passed, and for the focus moving means of Inoue to be controlled such that the focal point follows each of the information surfaces as suggested by Izumi, the motivation being to make the optical disk device of Inoue compatible with an information carrier having a plurality of information surfaces and the increased the storage capacity associated therewith.

In regard to claim 3, Inoue discloses that the optical disk device of Izumi in view of Inoue further comprises a reflected light quantity detecting means (Fig. 4, element 7) that detects a signal (Figs. 4 and 8-12, element FOK) corresponding to the amount of light reflected from the information carrier (see Figs. 1A and 1C), wherein the focal point passage detecting means detects passage of the focal point based upon the output signal from the reflected light quantity detecting means (Fig. 6B, step S109 and see Figs. 8B, 9 and 10).

Allowable Subject Matter

7. Claims 8, 10 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the references of record alone or in combination suggest or fairly teach an optical disk control device including all the limitations of claim 1 and further comprising **a movement amount managing detecting means A that manages and detects that the focal point moves a predetermined amount after the focal point passage detecting means detects passage of the focal point, wherein the reversal instruction means**

outputs a reversal instruction based upon the output signal from the movement amount managing detecting means A.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okada et al (US 6,400,663) disclose switching the motion of a converging lens during a focus search when an s-shaped signal is detected (Figs. 2 and 3). Nishikata (US 5,754,507) discloses driving a converging lens so that the focal point of the lens overshoots the target layer before reversing direction during an interlayer jump (Fig. 2). Naito (US 4,611,319) (Fig. 10H) and Shimamura et al (US 2001/0026506) (Figs. 4 and 5) disclose reversing the direction in which a converging lens moves when a voltage indicating a location nearest the disk is reached.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Battaglia whose telephone number is (571)272-7568. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael V. Battaglia/
Primary Examiner, Art Unit 2627